Tele Fax : 080-26704712
Cell : 9448354103

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An ISO 9001:2008 Certified Company
(Building, Geo-Tech & Highway Material Research Laboratory)
#20, 5th Cross, Sirsi Road, Chamarajpet, Bangalore-560018.
Email : bcs_sheetal@rediffmail.com Email : bcs_sheetal@yahoo.com
Website : www.sheetalengineering.co.in

10.12.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	08.12.2014
Date of Testing	:	09.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Sl No.	Details		Trial No. 1	Trial No. 2
1	Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	351	346
2	Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	248	253
3	Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	103	93
4	Aggregate Impact value (%)	(Wc/Wa)100	29.34	26.88
5	**Average Aggregate Impact value (%)**		**28.11**	

Comments: Maximum allowable Aggregate Impact value for WMM is 30%

Note: a) This test report should not be reproduced except in full, without written approval of the laboratory b) The results indicated above are based on the tests carried out on the samples collected by the laboratory c) Any Query regarding the report must be reported immediately.

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Ward No.12

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ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
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ಎಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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10.12.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	08.12.2014
Date of Testing	:	09.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Sl No.	Details		Trial No. 1	Trial No. 2
1	Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	346	342
2	Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	248	253
3	Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	98	89
4	Aggregate Impact value (%)	(Wc/Wa)100	28.32	26.02
5	**Average Aggregate Impact value (%)**		**27.17**	

Comments: Maximum allowable Aggregate Impact value for WMM is 30%

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Chamarajpet, BANGALORE - 560 018

Ravi. N.K,
AE W-12

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10.12.2014

Gradation for WMM

MORTH TABLE-400-11

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	08.12.2014
Date of Testing	:	09.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Oven Dry Wt (gm): **11500** gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
53.00	0	0	0	100	100	Gradation satisfies MORTH specification Table 400-11
45.00	347	3.02	3.02	96.98	95-100	
22.40	2663	23.16	26.17	73.83	60-80	
11.20	2151	18.70	44.88	55.12	40-60	
4.75	2149	18.69	63.57	36.43	25-40	
2.36	1536	13.36	76.92	23.08	15-30	
0.600	1274	11.08	88.00	12.00	8-22	
0.075	1252	10.89	98.89	1.11	0-8	

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Chamarajpet, BANGALORE - 560 018

Ravi. N.K.
AE W-12

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Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	08.12.2014
Date of Testing	:	09.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Oven Dry Wt (gm): **11500** gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
53.00	0	0	0	100	100	Gradation satisfies MORTH specification Table 400-11
45.00	328	2.85	2.85	97.15	95-100	
22.40	2649	23.03	25.89	74.11	60-80	
11.20	2163	18.81	44.70	55.30	40-60	
4.75	2159	18.77	63.47	36.53	25-40	
2.36	1547	13.45	76.92	23.08	15-30	
0.600	1258	10.94	87.86	12.14	8-22	
0.075	1234	10.73	98.59	1.41	0-8	

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Chamarajpet, BANGALORE - 560 018

Ravi. N.C.
AE N-12

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Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	08.12.2014
Date of Testing	:	09.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Oven Dry Wt (gm): **11500** gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
53.00	0	0	0	100	100	Gradation satisfies MORTH specification Table 400-11
45.00	335	2.91	2.91	97.09	95-100	
22.40	2632	22.89	25.80	74.20	60-80	
11.20	2149	18.69	44.49	55.51	40-60	
4.75	2132	18.54	63.03	36.97	25-40	
2.36	1563	13.59	76.62	23.38	15-30	
0.600	1241	10.79	87.41	12.59	8-22	
0.075	1239	10.77	98.18	1.82	0-8	

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Cell : 9448354103

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#20, 5th Cross, Sirsi Road, Chamarajpet, Bangalore-560018.
Email : bcs_sheetal@rediffmail.com Email : bcs_sheetal@yahoo.com
Website : www.sheetalengineering.co.in

10.12.2014

Flakiness & Elongation Index

IS: 2386 Part I

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	08.12.2014
Date of Testing	:	09.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Sieve Size (mm)		FLAKINESS INDEX		ELONGATION INDEX	
Passing	Retained	Wt.Of The Fraction Guaged(gm)	Wt.Of The Material Passing Through Flakiness Guage(gm)	Wt.Of The Fraction Gauged(gm)	Wt.Of The Material Retained Through Elongation Guage(gm)
		A	B	C	D
63	50	-	-	-	-
50	40	1141	149	941	-
40	31.5	8852	1267	1547	-
31.5	25	4874	513	13581	1947
25	20	2862	378	2832	413
20	16	1875	314	1847	292
16	12.5	1247	163	1276	213
12.5	10	586	92	574	91
10	6.3	291	58	269	34
Total		20587	2785	22867	2990

NOTE : Minimum 200Pcs Should be Taken On each Faction for Test

Flakiness Index % (B/A) X100 = **13.53**

Elongation Index % : (D/C) X 100 = **13.08**

Combined Flakiness & Elongation Index % = **26.60**

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Comments: Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

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20, 5th Cross, Sirsi Road,
Chamarajpet, BANGALORE - 560 018

Ravi.N.K.
A.E.W-12

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ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

Tele Fax : 080-26704712
Cell : 9448354103

SHEETAL ENGINEERING ASSOCIATES

An ISO 9001:2008 Certified Company
(Building, Geo-Tech & Highway Material Research Laboratory)
#20, 5th Cross, Sirsi Road, Chamarajpet, Bangalore-560018.
Email : bcs_sheetal@rediffmail.com Email : bcs_sheetal@yahoo.com
Website : www.sheetalengineering.co.in

10.12.2014

Flakiness & Elongation Index

IS: 2386 Part I

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	08.12.2014
Date of Testing	:	09.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Sieve Size (mm)		FLAKINESS INDEX		ELONGATION INDEX	
Passing	Retained	Wt.Of The Fraction Guaged(gm)	Wt.Of The Material Passing Through Flakiness Guage(gm)	Wt.Of The Fraction Gauged(gm)	Wt.Of The Material Retained Through Elongation Guage(gm)
		A	B	C	D
63	50	-	-	-	-
50	40	1026	139	896	-
40	31.5	8847	1216	954	-
31.5	25	4835	581	13732	1947
25	20	2874	409	2837	438
20	16	1863	303	1898	316
16	12.5	1279	194	1267	185
12.5	10	560	86	574	98
10	6.3	248	59	296	42
Total		20506	2848	22454	3026

NOTE : Minimum 200Pcs Should be Taken On each Faction for Test

Sheetal Engineering Associates Bangalore

Flakiness Index % (B/A) X100 = 13.89

Elongation Index % : (D/C) X 100 = 13.48

Combined Flakiness & Elongation Index % = 27.37

Comments: Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

Note: a) This test report should not be reproduced except in full, without written approval of the laboratory b) The results indicated above are based on the tests carried out on the samples collected by the laboratory c) Any Query regarding the report must be reported immediately

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20, 5th Cross, Sirsi Road,
Chamarajpet, BANGALORE - 560 018

Paul. N.K.
AE W.12

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ಎಸ್.ಎಂ. ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

Tele Fax : 080-26704712
Cell : 9448354103

SHEETAL ENGINEERING ASSOCIATES

An ISO 9001:2008 Certified Company
(Building, Geo-Tech & Highway Material Research Laboratory)
#20, 5th Cross, Sirsi Road, Chamarajpet, Bangalore-560018.
Email : bcs_sheetal@rediffmail.com Email : bcs_sheetal@yahoo.com
Website : www.sheetalengineering.co.in

11.12.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	09.12.2014
Date of Testing	:	10.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Sl No.	Details		Trial No.	
			1	2
1	Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	353	346
2	Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	249	254
3	Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	104	92
4	Aggregate Impact value (%)	(Wc/Wa)100	29.46	26.59
5	**Average Aggregate Impact value (%)**		**28.03**	

Comments: Maximum allowable Aggregate Impact value for WMM is 30%

Note: a) This test report should not be reproduced except in full, without written approval of the laboratory b) The results indicated above are based on the tests carried out on the samples collected by the laboratory c) Any Query regarding the report must be reported immediately

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20, 5th Cross, Sirsi Road,
Chamarajpet, BANGALORE - 560 018

Pavi. N.C.
AE Work

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Tele Fax : 080-26704712
Cell : 9448354103

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11.12.2014

Gradation for WMM

MORTH TABLE-400-11

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	09.12.2014
Date of Testing	:	10.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Oven Dry Wt (gm): **11500** gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
53.00	0	0	0	100	100	Gradation satisfies MORTH specification Table 400-11
45.00	341	2.97	2.97	97.03	95-100	
22.40	2667	23.19	26.16	73.84	60-80	
11.20	2142	18.63	44.78	55.22	40-60	
4.75	2136	18.57	63.36	36.64	25-40	
2.36	1559	13.56	76.91	23.09	15-30	
0.600	1241	10.79	87.70	12.30	8-22	
0.075	1278	11.11	98.82	1.18	0-8	

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AE W-12

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Tele Fax : 080-26704712
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Gradation for WMM

MORTH TABLE-400-11

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	09.12.2014
Date of Testing	:	10.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Oven Dry Wt (gm): 11500 gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
53.00	0	0	0	100	100	Gradation satisfies MORTH specification Table 400-11
45.00	343	2.98	2.98	97.02	95-100	
22.40	2639	22.95	25.93	74.07	60-80	
11.20	2167	18.84	44.77	55.23	40-60	
4.75	2141	18.62	63.39	36.61	25-40	
2.36	1568	13.63	77.03	22.97	15-30	
0.600	1242	10.80	87.83	12.17	8-22	
0.075	1281	11.14	98.97	1.03	0-8	

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Chamarajpet, BANGALORE - 560 018

Ravi N.K.
AE N-12

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ಎಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

Tele Fax : 080-26704712
Cell : 9448354103

SHEETAL ENGINEERING ASSOCIATES

An ISO 9001:2008 Certified Company
(Building, Geo-Tech & Highway Material Research Laboratory)
#20, 5th Cross, Sirsi Road, Chamarajpet, Bangalore-560018.
Email : bcs_sheetal@rediffmail.com Email : bcs_sheetal@yahoo.com
Website : www.sheetalengineering.co.in

11.12.2014

Gradation for WMM

MORTH TABLE-400-11

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	09.12.2014
Date of Testing	:	10.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Oven Dry Wt (gm): **11500** gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
53.00	0	0	0	100	100	Gradation satisfies MORTH specification Table 400-11
45.00	316	2.75	2.75	97.25	95-100	
22.40	2648	23.03	25.77	74.23	60-80	
11.20	2161	18.79	44.57	55.43	40-60	
4.75	2174	18.90	63.47	36.53	25-40	
2.36	1516	13.18	76.65	23.35	15-30	
0.600	1243	10.81	87.46	12.54	8-22	
0.075	1281	11.14	98.60	1.40	0-8	

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Tele Fax : 080-26704712
Cell : 9448354103

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#20, 5th Cross, Sirsi Road, Chamarajpet, Bangalore-560018.
Email : bcs_sheetal@rediffmail.com Email : bcs_sheetal@yahoo.com
Website : www.sheetalengineering.co.in

11.12.2014

Flakiness & Elongation Index

IS: 2386 Part I

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	09.12.2014
Date of Testing	:	10.12.2014
Type of Sample	:	Wet Mix Macadam
Sample Source/Location	:	Sample Supplied by Client

Sieve Size (mm)		FLAKINESS INDEX		ELONGATION INDEX	
Passing	Retained	Wt.Of The Fraction Guaged(gm)	Wt.Of The Material Passing Through Flakiness Guage(gm)	Wt.Of The Fraction Gauged(gm)	Wt.Of The Material Retained Through Elongation Guage(gm)
		A	B	C	D
63	50	-	-	-	-
50	40	1039	136	894	-
40	31.5	8861	1227	951	-
31.5	25	4834	589	13736	1952
25	20	2842	406	2832	441
20	16	1889	294	1894	328
16	12.5	1276	196	1272	192
12.5	10	569	81	561	106
10	6.3	245	54	253	57
Total		21555	2847	22393	3076

NOTE : Minimum 200Pcs Should be Taken On each Faction for Test

Flakiness Index % (B/A) X100 = 13.21

Elongation Index % : (D/C) X 100 = 13.74

Combined Flakiness & Elongation Index % = 26.94

Comments: Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

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Chamarajpet, BANGALORE - 560 018

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನ
ಬಿಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ,

Tele Fax : 080-26704712
Cell : 9448354103

SHEETAL ENGINEERING ASSOCIATES

An ISO 9001:2008 Certified Company
(Building, Geo-Tech & Highway Material Research Laboratory)
#20, 5th Cross, Sirsi Road, Chamarajpet, Bangalore-560018.
Email : bcs_sheetal@rediffmail.com Email : bcs_sheetal@yahoo.com
Website : www.sheetalengineering.co.in

16.01.2015

Test Report on Bitumen

IS: 73: 2013

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC-REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	14.01.2015
Date of Testing	:	15.01.2015
Type of Mix	:	Bituminous Concrete
Sample Source	:	Sample Supplied by Client

The results of the tests conducted on the bitumen sample using for Bituminous Concrete are as follows:

Sl. No	Description	Test Result	Requirement as per IS:73:2013 Table No. 1
1	Penetration at 25^{0}c, 100g,5s,0.1mm,Min	65	60
2	Softening point, R&B ^{0}C,Min	58	45
3	Ductility at 25^{0}c, cm Min	>100	50
4	Flash Point, ^{0}C, Min	275	220

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16.01.2015

Stripping Value of Road Aggregates (Static Immersion Test)

As per IS: 6241-1971,RA-2013

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	14.01.2015
Date of Testing	:	15.01.2015
Type of Mix	:	Bituminous Concrete
Sample Source/Location	:	Sample Supplied by Client

Sample No	Sample taken 20mm passing & 12.5 mm Retained in gm	% of 60/70 Bitumen Added by Wt	Liquid Used for Testing	Testing Temperature	Result	Specirfied Limits(%)
1	200	5.0%	Water	40° C	No Striping	Min Retained coating 95%
2	200	5.0%	Water	40° C	No Striping	Min Retained coating 95%
3	200	5.0%	Water	40° C	No Striping	Min Retained coating 95%

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Ravi W.I.C.

Sheetal Engineering Associates Bangalore

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16.01.2015

Aggregate Impact Value

IS: 2386 (Part IV) 1963,RA-2011

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	14.01.2015
Date of Testing	:	15.01.2015
Type of Mix	:	Bituminous Concrete
Sample Source	:	Sample Supplied by Client

Sl No.	Details	Trial No.	
		1	2
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	365	363
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	89
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	283	274
4	Aggregate Impact value = percent fines 100* (W_2/W_1) percent	22.47	24.52
5	**AVERAGE**	**23.49**	

Comments: Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

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Aggregate Shape Test

IS: 2386 (Part I)1963,RA-2011

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	14.01.2015
Date of Testing	:	15.01.2015
Type of Mix	:	Bituminous Concrete
Sample Source	:	Sample Supplied by Client

Size of Aggregates									
Passing through IS sieve, mm	Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g		Thickness guage size, mm	Weight of aggregate in each fraction passing thickness guage, g		Length guage size, mm	Weight of aggregate in each fraction retained on length guage, g	
63	50	W_1	0	33.9	w_1	0	--	x_1	0
50	40	W_2	0	27	w_2	0	81	x_2	0
40	31.5	W_3	0	21.5	w_3	0	64.4	x_3	0
31.5	25	W_4	0	16.95	w_4	0	--	x_4	0
25	20	W_5	0	13.5	w_5	0	40.5	x_5	0
20	16	W_6	0	10.8	w_6	0	32.4	x_6	0
16	12.5	W_7	1342	8.55	w_7	287	25.6	x_7	111
12.5	10	W_8	590	6.75	w_8	78	20.2	x_8	87
10	6.3	W_9	600	4.89	w_9	66	14.7	x_9	64

Flakiness Index 17.02%

Elongation Index 10.35%

Combined Flakiness & Elongation Index **27.37%**

Comments: Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

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ಎಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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16.01.2015

Specific Gravity And Water Absorption Test

IS: 2386 (Part III) 1963,RA-2011

Client	:	**M/s, Vinyas Builders, Bangalore.**
Job No.	:	SEA/VB/QC REPORTS-2/2015-16
Name of Work	:	Pot Holes Filling in ward No. 12 in Shettyhalli Sub Division.
Date of Sampling	:	14.01.2015 -
Date of Testing	:	15.01.2015
Type of Mix	:	Bituminous Concrete
Sample Source/Location	:	Sample Supplied by Client

Sl. No.	Details	Notation	Test Number		Mean Value
			Test 1	Test 2	
1	Weight of aggregate suspended in water with the basket	W1 g	2025	2025	
2	Weight of basket suspended in water	W2 g	760	760	
3	Weight of saturated aggregate in water	(W1 - W2) = Ws g	1265	1265	
4	Weight of saturated surface dry aggregate in air	W3 g	2000	2000	
5	Weight of water equal to the volume of the aggregate	(W3 - WS) g	735	735	
6	Weight of oven dried aggregate	W4 g	1989	1992	
he tests ca	Specific Gravity	W4/(W3-WS)	2.706	2.710	2.708
8	Apparent Specific gravity	W4/(W4-WS)	2.747	2.740	2.744
9	Water Absorption	((W3-W4)*100)/W4	0.55%	0.40%	**0.48%**

Comments: Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

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